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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,312	10/29/2001	Juergen Michel	112740-346	1650
29177	7590	08/19/2005	EXAMINER	
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			MEEK, JACOB M	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/018,312	Applicant(s) MICHEL ET AL.	
	Examiner Jacob Meek	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 16 - 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16, 28 - 30 is/are rejected.
- 7) ☒ Claim(s) 17 - 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Examiner's objection to drawings is withdrawn in view of modification to specification to make notation consistent.
2. Examiner's objection to Abstract is withdrawn in view of amendment.
3. Applicant's arguments filed June 13, 2005 have been fully considered with regard to claims 16, 29, and 30, but they are not persuasive. The following similarities exist between instant application and Popovic's disclosure. To wit:

<b>Applicant's Disclosure</b>	<b>Popovic's (TSG) Disclosure</b>
$X_0(k) = \delta_0(k)$	$a_0(k) = \delta_0(k)$
$X'_0(k) = \delta_0(k)$	$b_0(k) = \delta_0(k)$
$X_n(k) = X_{n-1}(k) + W_n * X'_{n-1}(k - D_n)$	$a_n(k) = a_{n-1}(k) + W_n * b_{n-1}(k - D_n)$
$X'_n(k) = X_{n-1}(k) - W_n * X'_{n-1}(k - D_n)$	$b_n(k) = a_{n-1}(k) - W_n * b_{n-1}(k - D_n)$
$k = 0, 1, 2, \dots, 2^{NX-1}$	$k = 0, 1, 2, \dots, 2^{N-1}$
$n = 1, 2, \dots, NX$	$n = 1, 2, \dots, N$
$D_n = 2^{Pn}$	$D_n = 2^{Pn}$

While variables may differ, the structure of the equations is identical and cannot be ignored. The disclosures also state use in the same area of invention. The K(i) notation is interpreted as being analogous to Popovic's disclosure (see column 6, lines 36 – 64) for the formation of Golay sequences. Examiner will require more explanation in order to differentiate between instant application and Popovic's disclosure.

4. Restatement of previous office action rejections of claims 16, 29, and 30.

Claims 16, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popovic (US Patent 6,567,482).

With regard to claim 16, Popovic teaches a method of synchronizing a base station with a mobile station comprising the steps of forming at least one of the partial signal sequences being a Golay sequence  $X_n(k)$  of length  $n_x=n_1=16$  using the following relationship:

$$X_0(k) = \delta(k)$$

$$X'_0(k) = \delta(k)$$

$$X_n(k) = X_{n-1}(k) + W_n * X'_{n-1}(k - D_n)$$

$$X'_n(k) = X_{n-1}(k) - W_n * X'_{n-1}(k - D_n)$$

$$k = 0, 1, 2, \dots, 2^{NX-1}$$

$$n = 1, 2, \dots, NX$$

$$D_n = 2^{Pn}$$

Where

$$n_x=16=2^{NX}$$

$$NX = 4$$

$\delta(k)$  : Kronecker delta function (see column 10, lines 31 – 42 where these equations are interpreted as being equivalent and inclusive), and taking permutation P and unit variable W used to form a partial signal sequence from permutation pairs (see column 10, lines 50 – 64 where this is interpreted as inclusive). Popovic is silent with respect to signal sequence being formed using rule  $K(i) = K2(i \bmod n2) * K1(i \div n2)$ , for  $i = 0, \dots, n1*n2-1$ . Popovic states the synchronization sequences can be constructed in variety of ways (see column 10, lines 7 – 30). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize Popovic teaching to derive a Golay sequencer to improve memory efficiency and complexity (see column 11, line 54 – 60).

With regard to claim 29, Popovic teaches that the method of claim 16 is useful in a base station transceiver (see column 5, lines 18 – 27).

With regard to claim 30, Popovic teaches that the method of claim 16 is useful in a mobile station transceiver (see column 5, lines 18 – 27).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Popovic (US-6,5657,482).

With regard to claim 28, Popovic discloses a method for synchronization by forming a synchronization sequence to emitted from the base station from a partial sequence, and receiving the synchronization sequence and processing it for synchronization purposes (see column 5, line 66 – column 6, 64). While not identical, examiner feels that this is a similar function (perhaps identical) to that claimed by applicant.

***Allowable Subject Matter***

6. Claims 17 – 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Other Cited Prior Art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Natali (US-5,764,630), O'Farrell (US-6,181,729), and Tiedmann (US-6,873,647) disclose inventions related to applicant's area of invention. NPL references provide technical background related to applicant's area of invention.

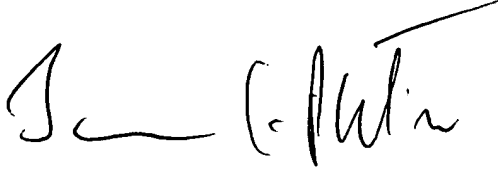
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM



**JAY K. PATEL**  
**SUPERVISORY PATENT EXAMINER**